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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/989,273	11/20/2001	William Robert Hanson	035451-0145 (3682.Palm)	9592

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EXAMINER

SAWHNEY, HARGOBIND S

ART UNIT	PAPER NUMBER
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2875

DATE MAILED: 03/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/989,273

Applicant(s)

HANSON ET AL.

Examiner

Hargobind S Sawhney

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 5,20,21 and 23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,6-19,22 and 24-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 6-9, 17-19, 22 and 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (U.S. Patent No. 5,982,092) in view of Baur et al. (U.S. Patent No. 4,142,781) and Umemoto et al. (U.S. Patent No. 6,366,409 B1).

Regarding claims 1, 2 and 6-9, Chen ('092) discloses a lighting system for a display (Figure 3) comprising:

- a light source 40 providing light having wavelength in a spectrum not visible to the human eyes (Figure 3, column 1, lines 10-14, and column 3, lines 10-14);
- a reflective layer 50- herewith also considered as a light converter - having a fluorescent surface reflecting the invisible light from the light source 40, and converting the invisible light into visible light to human eyes (Figure 3, column 3, lines 5-7 and 11-20);
- the light source including a light guide 10 (Chen, Figure 3, column 2, line 54).
- the light source including a light emitting diode (LED) 40 (Figure 3, column 3, lines 11-13); and

- the light emitting diode 40 emitting ultraviolet light (Figure 3, column 1, lines 9-12, and column 3, lines 34-38).

However, regarding claims 1 and 6, Chen ('092) discloses a reflective layer having a fluorescent coating instead of a reflective layer having a phosphorescent coating in a substrate as claimed by the applicant.

On the other hand, Baur et al. ('781) discloses an electro-optical display device (Figure 9) comprising a fluorescent plate 1a, and an additional a layer 25 containing phosphorescent particles (Figure 9, column 9, lines 5-10). Baur et al. ('781) further teaches the phosphorescent particles embedded in the layer metallic coating (Column 8, lines 17-20).

It would be have been obvious to one of ordinary skill in the art at the time of the invention to modify the lighting system of Chen ('092) by providing the layer containing phosphorescent particles as taught by Baur et al. ('781) for the benefits and advantages of providing afterglow of the display after the device in switched-off.

Further, regarding Claim 1, Chen ('092) teaches the disclosed light source useable for a liquid crystal display (LCD) (Figure 1 and abstract). However, Chan does not disclose specific features of the LCD.

On the other hand, Umemoto et al. ('409 B1) discloses a planer light source 11 (Figures 3 and 4) with a display layer 3 (Figure 3, column 15, lines 5-7) inherently having its pixels altered with an application of electric charge.

It would be have been obvious to one of ordinary skill in the art at the time of the invention to combine lighting system of Chen ('092) in view of Baur et al. ('781) with the

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display layer - LCD- and its positioning as taught by Umemoto for the benefits and advantage of providing a display system with a lighting system having long operational life, energy efficiency and steady illumination.

Regarding claims 3 and 4, Chen ('092) teaches the disclosed light source useable as a liquid crystal display (LCD) (Figure 1 and abstract). However, neither combined nor individual teaching of Chen ('092), Umemoto et al. ('409 B1) and Baur et al. ('781) discloses positioning of the light source with respect to the LCD.

On the other hand, Umemoto et al. ('409 B1) discloses a planar light source 11 (Figures 3 and 4) with a display layer 3 (Figure 3, column 15, lines 5-7) inherently having its pixels altered with an application of electric charge. In addition, Umemoto teaches alternate positions – below or above - the planar light source 11 (Figures 3 and 4) relative to the display layer 3.

It would have been obvious to one of ordinary skill in the art at the time of the invention to locate the lighting system of Chen ('092) in view of Baur et al. ('781) as taught by Umemoto for the benefits and advantage of making the device useable as a light source either for reflection-type or refraction-type LCDs.

Regarding claims 17-19, 22 and 24-27, Chen ('092) in view of Umemoto et al. ('409 B1) and Baur et al. ('781) discloses a display system meeting the limitations of the claims in the same manner as that for meeting the limitations of claims 1-4, 8 and 9 detailed above.

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3. Claims 10-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (U.S. Patent No. 5,982,092) in view of Umemoto et al. (U.S. Patent No. 6,366,409 B1).

Regarding claims 10,11,14 and 15 Chen ('092) in view of Umemoto et al. ('409 B1) obviously meets the method limitations with the disclosure of a device comprising:

- a light source 40 (LED) emitting light in visible to the human eyes, a reflective layer 50 having a fluorescent surface reflecting the invisible light, and converting it to the light visible to the human eye;

- the reflective layer 50 inherently having a metallized surface; and the light source LED 40 providing ultraviolet (UV) light.

Umemoto et al. ('409 B1) discloses a liquid crystal display (LCD) 3 with display layer inherently having its pixels.

However, regarding claims 12 and 13, neither in combination nor individually Chen ('092) in view of Umemoto et al. ('409 B1) teaches an LED light source emitting infrared light for display system. It would be have been obvious to one of ordinary skill in the art at the time of the invention to make use of LEDs emitting IR light instead of UV light emitting diodes, since use of these types of LEDs for a display system is known in the art.

Regarding Claim 16, neither in combination nor individually Chen ('092) in view of Umemoto et al. ('409 B1) teaches the display element being an electronic paper(e-paper) display element.

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It has been held that a recitation with respect to the manner in which a claim apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitation.

Finally, it would have been obvious to one of ordinary skill in the art at the time of the invention to make use of the teachings Chen and Umemoto for meeting the method limitations of Claims 10-16.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Flynn (US Patent 5,815,228) and, Zatsky (US Patent 3,950,078 B1) each discloses a display combined with a lighting system comprising some of the features claimed by the applicant.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hargobind S Sawhney whose telephone number is 703-306-5909. The examiner can normally be reached on 6:15 - 2:45.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on 703-305-4939. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-93187724 for regular communications and 703-872-9319 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-2956.

HSS

Examiner:


Hargobind S. Sawhney

3/20/2003